REMARKS

Claims 1, 3, 5, 10-12, 25, 26, 143, 146, 153, 155-160 are pending in the present application. Claims 1, 3, 5, 10-12, 25, 26, 143, 146, 153, 155-160 stand rejected under 35 U.S.C. § 103(a).

The Examiner has rejected Claims 1, 3, 5, 10-12, 25, 26, 143, 146, 147, 148 and 153-160 under 35 U.S.C. § 103(a) as being unpatentable over International Patent Application WO 91/15719 (Huston) in view of European Patent Application EP 353021 (Samuel), PCT Application WO 95/05753 (Bishop), Japanese Patent Application JP 2-82083 (Fukada) and European Patent Application EP 136042 (Lovegrove et al). In light of the amendments to the claims and the arguments made below the Applicant respectfully traverses the rejection.

The Applicant's invention is a method for modifying the atmosphere within a chamber, such as a shipping container, so that perspiring produce stored in the chamber will deteriorate more slowly than in the ambient atmosphere. In particular, the invention involves (1) maintaining the chamber atmosphere at an O_2 set point (by controlling the O_2 through monitoring the level and admitting ambient air, wherein chamber atmosphere is allowed to exit to maintain approximately ambient pressure) and (2) removing CO_2 at a known rate by way of a CO_2 absorbing material, to keep it at or below a prescribed level.

The advantage of the Applicant's invention is in that a CO_2 absorbent can be selected for use in the container so that the CO_2 will be approximately maintained at a chosen level without the need for active CO_2 monitoring. So, in broad terms, the simple combination of O_2 control and removal of the CO_2 at appropriate prescribed rates allows mutually independent control of O_2 and CO_2 levels.

In the Examiner's most recent action it was noted that one of the differences between the Applicant's invention and the Huston reference is that the Huston reference requires both O_2 and CO_2 monitoring. In combining the Lovegrove et al. reference with Huston for the § 103 rejection,

the Examiner notes that in the Lovegrove et al. reference the CO_2 level is "preferably" monitored, thus showing that this reference teaches elimination of CO_2 without CO_2 monitoring. While the Applicant would agree that while the Lovegrove et al. does disclose that only O_2 monitoring and removal may be performed, the Applicant disagrees that Lovegrove et al. teaches that CO_2 removal may be performed without CO_2 monitoring.

In Lovegrove et al. the device employed for removing CO_2 from a chamber is a container which includes entry and exit valves, a fan and a layer of hydrated lime. As described in the detailed description, whenever the CO_2 content in the chamber is detected to be above a certain level, the scrubber is activated and CO_2 is removed. The Applicant has not been able to find any description in the Lovegrove et al. reference which describes that CO_2 removal is performed other than with CO_2 detection. This would make sense because the type of CO_2 removal device used in Lovegrove et al. is turned on and off, and would most likely be turned on only in response to a detected condition.

The Applicant further argues that the statements made in Lovegrove et al. with regards to the preferable monitoring of the CO_2 would suggest that the system may be configured to only monitor and modify O_2 levels while no processes are performed with regards to CO_2 content. This interpretation is supported in the detailed description of Lovegrove et al. which states:

> It can be appreciated that the scrubbing procedure for controlling carbon dioxide is necessary since as a flushing system using ambient air is being employed to control the oxygen level a similar flushing system using ambient air can not be used for the control of the carbon dioxide level and for this reason the present invention also consists in the control of the carbon dioxide level within a closed environment employing a controller activated by carbon dioxide levels within the environment which activates a positive infusion of gas from the environment through a carbon dioxide scrubber and from there back into the environment. (See Page 22, lines 1-10).

It is clear in Lovegrove et al., that the carbon dioxide cannot be controlled effectively with the components disclosed without carbon dioxide concentration monitoring.

Another point to be made with regards to the Applicant's invention, is that it is not necessarily directed towards CO_2 suppression, but CO_2 control. The amount of CO_2 removing material used directly correlates to the desired CO_2 concentration allowable in the container. The Applicant has amended Claims 1, 143, 153, and 160 to better define this functionality.

The combination of Fukada with the other cited references also does not make obvious the Applicant's invention. As was noted previously, Fukada is a system which maintains a nitrogen rich condition for food storage. The system includes an oxygen sensor and an apparatus for purging the food storage chamber with nitrogen gas when oxygen levels exceed a predetermined set point. There is nothing in this reference which teaches CO_2 removal either with or without CO_2 monitoring and as such its combination with any other reference does not make the Applicant's invention obvious.

With regards to the Bishop reference, although there is not an explicit description of a CO_2 monitoring, it is obvious to one skilled in the art that oxygen monitoring is implicit in the description. More specifically, as with Lovegrove et al., the device for removing CO_2 from the chamber is one that is activated and deactivated in order for it to perform its task. In the description it is disclosed that:

> d) When the carbon dioxide in room 1 becomes higher than required, the carbon bed 3 is prepared for operation. Nitrogen from the membrane 4 is purged through the bed 3 by opening valves E, D and H. This continues for a time sufficient for the majority of the oxygen to be removed from the carbon bed 3. The relevant valves are then closed. (See Page 7, lines 1-9).

As can be seen, the carbon bed is not employed until it is determined that the carbon dioxide level is higher than required. Thus, this determination step makes it clear that carbon dioxide monitoring is implicit in the system described in the Bishop reference.

In summary, it is clear that none of the references cited by the Examiner teach a container system which can control CO_2 concentration without some type of CO_2 monitoring. The Applicant's invention performs just such a task. Based on a number of criteria, an amount of CO_2 removing material may be selected, and while the container is being used it will remove CO_2 at a known rate so as to maintain a desired CO_2 concentration in the container. As such, in light of the arguments made above the Examiner's rejections under 35 U.S.C. § 103(a) are respectfully traversed.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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